

Amendments to the Claims:

1. – 22. (cancelled)

23. (currently amended) An isolated nucleic acid molecule comprising

(i) a nucleotide sequence encoding urease X and urease Y subunit polypeptides of a urease complex expressed by *Helicobacter felis*, said nucleotide sequence having at least 85% homology with nucleotides 206 - 2603 of SEQ ID NO: 1 as determined over a global alignment wherein the mismatch value is 1, the open gap value is 3 and the extended gap value is 3 wherein the percent homology is determined by

(a) globally aligning the nucleotide sequence to nucleotides 206 - 2603 of SEQ ID NO: 1,

(b) adding up the aligned nucleotides that are identical to obtain a number of identical globally aligned nucleotides,

(c) dividing said number of identical globally aligned nucleotides by 2398 to obtain a ratio, and

(d) multiplying said ratio by 100 thereby obtaining the percent homology; or

(ii) a part of (i) encoding at least an immunogenic fragment of one of said subunits, said part having a length of at least ~~[[70]]~~ 120 nucleotides.

24. – 25. (cancelled)

26. (original) The nucleic acid molecule of claim 23, which encodes one or both of the urease X subunit polypeptide and urease Y subunit polypeptide.

27. (cancelled)

28. (currently amended) The nucleic acid molecule of claim 23, wherein the nucleotide

sequence has at least 94% homology with SEQ ID No: 1 ~~as determined over a global alignment wherein the mismatch value is 1, the open gap value is 3 and the extended gap value is 3.~~

29. (cancelled)

30. (previously presented) An isolated and purified DNA fragment comprising a nucleotide sequence according to claim 23.

31. (original) A recombinant DNA molecule comprising a nucleotide sequence according to Claim 23 under the control of a functionally linked promoter.

32. (original) A live recombinant carrier comprising a recombinant DNA molecule of claim 31.

33. (original) A host cell comprising a nucleic acid molecule of claim 23, a DNA fragment of claim 30, a recombinant DNA molecule of claim 31 or a live recombinant carrier of claim 32.

34. (currently amended) An isolated *Helicobacter felis* urease X subunit polypeptide, said polypeptide comprising

[[a)] (i) an amino acid sequence that is at least 85% homologous to SEQ ID NO: 2 as determined over a global alignment wherein the mismatch value is 2, the open gap value is 4 and the extended gap value is 1 wherein the percent homology is determined by

(a) globally aligning the amino acid sequence to SEQ ID NO: 2,

(b) adding up the aligned amino acids that are identical to obtain a number of identical globally aligned amino acids,

(c) dividing said number of identical globally aligned amino acids by 226 to obtain a ratio, and

(d) multiplying said ratio by 100 thereby obtaining the percent homology; or

[[b)] (ii) an immunogenic fragment of [[a)] (i) having a length of at least 70 amino

acids,

wherein said immunogenic fragment induces an immune response against a urease X subunit in ureaseXY.

35. -36. (cancelled)

37. (currently amended) The polypeptide of claim 34, wherein said polypeptide comprises:

[[(i)]] (iii) an amino acid sequence that is at least 90% homologous to SEQ ID NO: 2 as determined over a global alignment wherein the mismatch value is 2, the open gap value is 4 and the extended gap value is 1; or

[[(ii)]] (iv) an immunogenic fragment of [[(i)]] (iii) having a length of at least 70 amino acids; wherein said immunogenic fragment induces an immune response against a urease X subunit in ureaseXY.

38. (currently amended) The polypeptide of claim 34, wherein said polypeptide comprises:

[[(i)]] (iii) an amino acid sequence that is at least 94% homologous to SEQ ID NO: 2 as determined over a global alignment wherein the mismatch value is 2, the open gap value is 4 and the extended gap value is 1; or

[[(ii)]] (iv) an immunogenic fragment of [[(i)]] (iii) having a length of at least 70 amino acids;
wherein said immunogenic fragment induces an immune response against a urease X subunit in ureaseXY.

39. (currently amended) The polypeptide of claim 34, wherein said polypeptide comprises:

[[(i)]] (iii) an amino acid sequence that is at least 99% homologous to SEQ ID NO: 2 as determined over a global alignment wherein the mismatch value is 2, the open gap value is 4 and the extended gap value is 1; or

[[(ii)]] (iv) an immunogenic fragment of [[(i)]] (iii) having a length of at least 70 amino

acids;

wherein said immunogenic fragment induces an immune response against a urease X subunit in ureaseXY.

40. (currently amended) An isolated *Helicobacter felis* urease Y subunit polypeptide, said polypeptide comprising

[[a)] (i) an amino acid sequence that is at least 86% homologous to SEQ ID NO: 3 as ~~determined over a global alignment wherein the mismatch value is 2, the open gap value is 4 and the extended gap value is 1~~ wherein the percent homology is determined by

- (a) globally aligning the amino acid sequence to SEQ ID NO: 3,
- (b) adding up the aligned amino acids that are identical to obtain a number of identical globally aligned amino acids,
- (c) dividing said number of identical globally aligned amino acids by 568 to obtain a ratio, and
- (d) multiplying the ratio by 100 thereby obtaining the percent homology; or

[[b)] (ii) an immunogenic fragment of [[a)] (i) having a length of at least 70 amino acids, wherein said immunogenic fragment induces an immune response against a ureaseY subunit in ureaseXY.

41.- 43. (cancelled)

44. (currently amended) The polypeptide of claim 40, wherein said polypeptide comprises:

[[i)] (iii) an amino acid sequence that is at least 98% homologous to SEQ ID NO: 3 as ~~determined over a global alignment wherein the mismatch value is 2, the open gap value is 4 and the extended gap value is 1;~~ or

[[ii)] (iv) an immunogenic fragment of [[i)] (iii) having a length of at least 70 amino acids; wherein said immunogenic fragment induces an immune response against a urease Y subunit in ureaseXY.

45. (cancelled)

46. (currently amended) An immunogenic composition comprising an immunogenically effective amount of a nucleic acid molecule of claim 23 under the control of a promoter that is operably linked to said nucleic acid molecule and a pharmaceutically acceptable carrier.

47. (previously presented) The immunogenic composition of claim 46, further comprising an adjuvant.

48. (previously presented) The immunogenic composition of claim 46, further comprising an additional antigen derived from a virus or microorganism which is pathogenic to mammals.

49. (previously presented) The immunogenic composition of claim 48, wherein said virus or microorganism pathogenic to mammals is selected from the group consisting of Feline Infectious Peritonitis virus, Feline Immune deficiency virus, Canine Parvovirus, Feline Parvovirus, Distemper virus, Adenovirus, Calicivirus, *Bordetella bronchiseptica*, *Borrelia burgdorferi*, *Leptospira interrogans*, *Chlamydia* and *Bartonella henseli*.

50. (previously presented) An immunogenic composition for combating *Helicobacter felis* infections, comprising antibodies against a polypeptide of claims 34 or 40.

51.- 56. (cancelled)

57. (previously presented) An immunogenic composition, comprising an immunogenically effective amount of a polypeptide according to Claim 34 and a pharmaceutically acceptable carrier.

58. (previously presented) An immunogenic composition, comprising an immunogenically effective amount of a polypeptide according to claim 40 and pharmaceutically acceptable carrier.

59. (currently amended) The polypeptide of claim 40, wherein said polypeptide comprises:

[[(i)]] (iii) an amino acid sequence that is at least 99% homologous to SEQ ID NO: 3 as ~~determined over a global alignment wherein the mismatch value is 2, the open gap value is 4 and the extended gap value is 1;~~ or

[[(ii)]] (iv) an immunogenic fragment of [[(i)]] (iii) having a length of at least 70 amino acids;

wherein said immunogenic fragment induces an immune response against a urease Y subunit in ureaseXY.